

JC03 Rec'd PCT/PTO 28 FEB 2001

SEQUENCE LISTING

<210> 1

<211> 963

<212> PRT

<213> Homo sapiens

<400> 1

Met Ala Thr Ala Ala Glu Thr Ser Ala Ser Glu | Pro Glu Ala Glu Ser

Lys Ala Gly Pro Lys Ala Asp Gly Glu Glu Asp Glu Val Lys Ala Ala

Arg Thr Arg Arg Lys Val Leu Ser Arg Ala Val Ala Ala Ala Thr Tyr

Lys Thr Met Gly Pro Ala Trp Asp Gln Gln Glu Glu Gly Val Ser Glu

Ser Asp Gly Asp Glu Tyr Ala Met Ala Ser Ser Ala Glu Ser Ser Pro

Gly Glu Tyr Glu Trp Glu Tyr Asp Glu Glu Glu Glu Lys Asn Gln Leu

Glu Ile Glu Arg Leu Glu Glu Gln Leu Ser Ile Asn Val Tyr Asp Tyr

Asn Cys His Val Asp Leu Ile Arg Leu Leu Arg Leu Glu Gly Glu Leu

115

120

125

Thr Lys Val Arg Met Ala Arg Gln Lys Met Ser Glu Ile Phe Pro Leu
 130 135 140
 Thr Glu Glu Leu Trp Leu Glu Trp Leu His Asp Glu Ile Ser Met Ala
 145 150 155 160
 5 Gln Asp Gly Leu Asp Arg Glu His Val Tyr Asp Leu Phe Glu Lys Ala
 165 170 175
 Val Lys Asp Tyr Ile Cys Pro Asn Ile Trp Leu Glu Tyr Gly Gln Tyr
 180 185 190
 Ser Val Gly Gly Ile Gly Gln Lys Gly Gly Leu Glu Lys Val Arg Ser
 10 195 200 205
 Val Phe Glu Arg Ala Leu Ser Ser Val Gly Leu His Met Thr Lys Gly
 210 215 220
 Leu Ala Leu Trp Glu Ala Tyr Arg Glu Phe Glu Ser Ala Ile Val Glu
 225 230 235 240
 15 Ala Ala Arg Leu Glu Lys Val His Ser Leu Phe Arg Arg Gln Leu Ala
 245 250 255
 Ile Pro Leu Tyr Asp Met Glu Ala Thr Phe Ala Glu Tyr Glu Glu Trp
 260 265 270
 Ser Glu Asp Pro Ile Pro Glu Ser Val Ile Gln Asn Tyr Asn Lys Ala
 20 275 280 285
 Leu Gln Gln Leu Glu Lys Tyr Lys Pro Tyr Glu Glu Ala Leu Leu Gln
 290 295 300
 Ala Glu Ala Pro Arg Leu Ala Glu Tyr Gln Ala Tyr Ile Asp Phe Glu
 305 310 315 320
 25 Met Lys Ile Gly Asp Pro Ala Arg Ile Gln Leu Ile Phe Glu Arg Ala
 325 330 335
 Leu Val Glu Asn Cys Leu Val Pro Asp Leu Trp Ile Arg Tyr Ser Gln
 340 345 350
 Tyr Leu Asp Arg Gln Leu Lys Val Lys Asp Leu Val Leu Ser Val His

	355	360	365
	Asn Arg Ala Ile Arg Asn Cys Pro Trp Thr Val Ala Leu Trp Ser Arg		
	370	375	380
	Tyr Leu Leu Ala Met Glu Arg His Gly Val Asp His Gln Val Ile Ser		
5	385	390	395
	Val Thr Phe Glu Lys Ala Leu Asn Ala Gly Phe Ile Gln Ala Thr Asp		
	405	410	415
	Tyr Val Glu Ile Trp Gln Ala Tyr Leu Asp Tyr Leu Arg Arg Arg Val		
	420	425	430
10	Asp Phe Lys Gln Asp Ser Ser Lys Glu Leu Glu Glu Leu Arg Ala Ala		
	435	440	445
	Phe Thr Arg Ala Leu Glu Tyr Leu Lys Gln Glu Val Glu Glu Arg Phe		
	450	455	460
	Asn Glu Ser Gly Asp Pro Ser Cys Val Ile Met Gln Asn Trp Ala Arg		
15	465	470	475
	Ile Glu Ala Arg Leu Cys Asn Asn Met Gln Lys Ala Arg Glu Leu Trp		
	485	490	495
	Asp Ser Ile Met Thr Arg Gly Asn Ala Lys Tyr Ala Asn Met Trp Leu		
	500	505	510
20	Glu Tyr Tyr Asn Leu Glu Arg Ala His Gly Asp Thr Gln His Cys Arg		
	515	520	525
	Lys Ala Leu His Arg Ala Val Gln Cys Thr Ser Asp Tyr Pro Glu His		
	530	535	540
	Val Cys Glu Val Leu Leu Thr Met Glu Arg Thr Glu Gly Ser Leu Glu		
25	545	550	555
	Asp Trp Asp Ile Ala Val Gln Lys Thr Glu Thr Arg Leu Ala Arg Val		
	565	570	575
	Asn Glu Gln Arg Met Lys Ala Ala Glu Lys Glu Ala Ala Leu Val Gln		
	580	585	590

Gln Glu Glu Glu Lys Ala Glu Gln Arg Lys Arg Ala Arg Ala Glu Lys
 595 600 605
 Lys Ala Leu Lys Lys Lys Lys Lys Ile Arg Gly Pro Glu Lys Arg Gly
 610 615 620
 5 Ala Asp Glu Asp Asp Glu Lys Glu Trp Gly Asp Asp Glu Glu Glu Gln
 625 630 635 640
 Pro Ser Lys Arg Arg Arg Val Glu Asn Ser Ile Pro Ala Ala Gly Glu
 645 650 655
 Thr Gln Asn Val Glu Val Ala Ala Gly Pro Ala Gly Lys Cys Ala Ala
 10 660 665 670
 Val Asp Val Glu Pro Pro Ser Lys Gln Lys Glu Lys Ala Ala Ser Leu
 675 680 685
 Lys Arg Asp Met Pro Lys Val Leu His Asp Ser Ser Lys Asp Ser Ile
 690 695 700
 15 Thr Val Phe Val Ser Asn Leu Pro Tyr Ser Met Gln Glu Pro Asp Thr
 705 710 715 720
 Lys Leu Arg Pro Leu Phe Glu Ala Cys Gly Glu Val Val Gln Ile Arg
 725 730 735
 Pro Ile Phe Ser Asn Arg Gly Asp Phe Arg Gly Tyr Cys Tyr Val Glu
 20 740 745 750
 Phe Lys Glu Glu Lys Ser Ala Leu Gln Ala Leu Glu Met Asp Arg Lys
 755 760 765
 Ser Val Glu Gly Arg Pro Met Phe Val Ser Pro Cys Val Asp Lys Ser
 770 775 780
 25 Lys Asn Pro Asp Phe Lys Val Phe Arg Tyr Ser Thr Ser Leu Glu Lys
 785 790 795 800
 His Lys Leu Phe Ile Ser Gly Leu Pro Phe Ser Cys Thr Lys Glu Glu
 805 810 815
 Leu Glu Glu Ile Cys Lys Ala His Gly Thr Val Lys Asp Leu Arg Leu

	820		825		830	
	Val Thr Asn Arg Ala Gly Lys Pro	Lys Gly Leu Ala Tyr Val Glu Tyr				
	835		840		845	
	Glu Asn Glu Ser Gln Ala Ser Gln	Ala Val Met Lys Met Asp Gly Met				
5	850		855		860	
	Thr Ile Lys Glu Asn Ile Ile Lys	Val Ala Ile Ser Asn Pro Pro Gln				
	865		870		875	880
	Arg Lys Val Pro Glu Lys Pro	Glu Thr Arg Lys Ala Pro Gly Gly Pro				
	885		890		895	
10	Met Leu Leu Pro Gln Thr Tyr	Gly Ala Arg Gly Lys Gly Arg Thr Gln				
	900		905		910	
	Leu Ser Leu Leu Pro Arg Ala	Leu Gln Arg Pro Ser Ala Ala Ala Pro				
	915		920		925	
	Gln Ala Glu Asn Gly Pro	Ala Ala Ala Pro Ala Val Ala Ala Pro Ala				
15	930		935		940	
	Ala Thr Glu Ala Pro Lys Met	Ser Asn Ala Asp Phe Ala Lys Leu Phe				
	945		950		955	960
	Leu Arg Lys					
	963					
20						
	<210> 2					
	<211> 3798					
	<212> DNA					
	<213> Homo sapiens					
25	<400> 2					
	ccacgcgtcc g atg	gcg act gcg gcc gaa acc tcg gct tca gaa ccc gag				50
	Met	Ala Thr Ala Ala Glu Thr Ser Ala Ser Glu Pro Glu				
			5		10	
	gct gag tcc aag	gct ggg ccc aag gct gac gga gag gag gat gag gtt				98

	Ala Glu Ser Lys Ala Gly Pro Lys	Ala Asp Gly Glu Glu Asp Glu Val	
	15	20	25
	aag gcg gct agg aca agg aga aag	gtg tta tcg cgg gct gtg gcc gct	146
	Lys Ala Ala Arg Thr Arg Arg Lys	Val Leu Ser Arg Ala Val Ala Ala	
5	30	35	40 45
	gcg aca tac aag acc atg ggg cca	gcg tgg gat cag cag gag gaa ggc	194
	Ala Thr Tyr Lys Thr Met Gly Pro	Ala Trp Asp Gln Gln Glu Glu Gly	
	50	55	60
	gtg agc gag agc gat ggg gat gag	tac gcc atg gct tcc tcc gcg gag	242
10	Val Ser Glu Ser Asp Gly Asp Glu	Tyr Ala Met Ala Ser Ser Ala Glu	
	65	70	75
	agc tcc ccc ggg gag tac gag tgg	gaa tat gac gaa gag gag gag aaa	290
	Ser Ser Pro Gly Glu Tyr Glu Trp	Glu Tyr Asp Glu Glu Glu Glu Lys	
	80	85	90
15	aac cag ctg gag att gag aga ctg	gag gag cag ttg tct atc aac gtc	338
	Asn Gln Leu Glu Ile Glu Arg Leu	Glu Glu Gln Leu Ser Ile Asn Val	
	95	100	105
	tat gac tac aac tgc cat gtg gac	ttg atc aga ctg ctc agg ctg gaa	386
	Tyr Asp Tyr Asn Cys His Val Asp	Leu Ile Arg Leu Leu Arg Leu Glu	
20	110	115	120 125
	ggg gag ctt acc aag gtg agg atg	gcc cgc cag aag atg agt gaa atc	434
	Gly Glu Leu Thr Lys Val Arg Met	Ala Arg Gln Lys Met Ser Glu Ile	
	130	135	140
	ttt ccc ttg act gaa gag ctc tgg	ctg gag tgg ctg cat gac gag atc	482
25	Phe Pro Leu Thr Glu Glu Leu Trp	Leu Glu Trp Leu His Asp Glu Ile	
	145	150	155
	agc atg gcc cag gat ggc ctg gac	aga gag cac gtg tat gac ctc ttt	530
	Ser Met Ala Gln Asp Gly Leu Asp	Arg Glu His Val Tyr Asp Leu Phe	
	160	165	170

	gag aaa gcc gtg aag gat tac att tgt cct aac att tgg cta gag tat	578
	Glu Lys Ala Val Lys Asp Tyr Ile Cys Pro Asn Ile Trp Leu Glu Tyr	
	175 180 185	
	ggc cag tac tca gtt ggt ggg att ggt cag aaa ggt ggc ctt gag aaa	626
5	Gly Gln Tyr Ser Val Gly Gly Ile Gly Gln Lys Gly Gly Leu Glu Lys	
	190 195 200 205	
	gtt cgc tcc gtg ttt gaa agg gct ctc tcg tct gtt ggt tta cat atg	674
	Val Arg Ser Val Phe Glu Arg Ala Leu Ser Ser Val Gly Leu His Met	
	210 215 220	
10	acc aaa gga ctc gcc ctc tgg gag gct tac cga gag ttt gaa agt gcg	722
	Thr Lys Gly Leu Ala Leu Trp Glu Ala Tyr Arg Glu Phe Glu Ser Ala	
	225 230 235	
	att gtg gaa gct gct cgg ctt gag aaa gtc cac agt ctt ttc cgg cga	770
	Ile Val Glu Ala Ala Arg Leu Glu Lys Val His Ser Leu Phe Arg Arg	
15	240 245 250	
	cag ttg gcg atc cca ctc tat gat atg gag gcc aca ttt gca gag tat	818
	Gln Leu Ala Ile Pro Leu Tyr Asp Met Glu Ala Thr Phe Ala Glu Tyr	
	255 260 265	
	gaa gaa tgg tca gaa gac cca ata cca gag tca gta att cag aac tat	866
20	Glu Glu Trp Ser Glu Asp Pro Ile Pro Glu Ser Val Ile Gln Asn Tyr	
	270 275 280 285	
	aac aaa gca cta cag cag ctg gag aaa tat aaa ccc tat gaa gaa gca	914
	Asn Lys Ala Leu Gln Gln Leu Glu Lys Tyr Lys Pro Tyr Glu Glu Ala	
	290 295 300	
25	ctg ttg cag gca gag gca cca agg ctg gca gaa tat caa gca tat atc	962
	Leu Leu Gln Ala Glu Ala Pro Arg Leu Ala Glu Tyr Gln Ala Tyr Ile	
	305 310 315	
	gat ttt gag atg aaa att ggc gat cct gct cgc att cag ttg atc ttt	1010
	Asp Phe Glu Met Lys Ile Gly Asp Pro Ala Arg Ile Gln Leu Ile Phe	

	320	325	330	
	gag cgc gcc ctg gtc gag aac	tgc ctt gtc cca gac tta tgg atc cgt		1058
	Glu Arg Ala Leu Val Glu Asn	Cys Leu Val Pro Asp Leu Trp Ile Arg		
	335	340	345	
5	tac agt cag tac cta gat cga	caa ctg aaa gta aag gat ttg gtt tta		1106
	Tyr Ser Gln Tyr Leu Asp Arg	Gln Leu Lys Val Lys Asp Leu Val Leu		
	350	355	360	365
	tct gta cat aac cgc gct att aga	aac tgc ccc tgg aca gtt gcc tta		1154
	Ser Val His Asn Arg Ala Ile Arg	Asn Cys Pro Trp Thr Val Ala Leu		
10	370	375	380	
	tgg agt cgg tac ctc ttg gcc atg	gag aga cat gga gtt gat cat caa		1202
	Trp Ser Arg Tyr Leu Leu Ala Met	Glu Arg His Gly Val Asp His Gln		
	385	390	395	
	gta att tct gta acc ttc gag aaa	gct ttg aat gcc ggc ttc atc cag		1250
15	Val Ile Ser Val Thr Phe Glu Lys	Ala Leu Asn Ala Gly Phe Ile Gln		
	400	405	410	
	gcc act gat tat gtg gag att tgg	cag gca tac ctt gat tac ctg agg		1298
	Ala Thr Asp Tyr Val Glu Ile Trp	Gln Ala Tyr Leu Asp Tyr Leu Arg		
	415	420	425	
20	aga agg gtt gat ttc aaa caa gac	tcc agt aaa gag ctg gag gag ttg		1346
	Arg Arg Val Asp Phe Lys Gln Asp	Ser Ser Lys Glu Leu Glu Glu Leu		
	430	435	440	445
	agg gcc gcc ttt act cgt gcc ttg	gag tat ctg aag cag gag gtg gaa		1394
	Arg Ala Ala Phe Thr Arg Ala Leu	Glu Tyr Leu Lys Gln Glu Val Glu		
25	450	455	460	
	gag cgt ttc aat gag agt ggt gat	cca agc tgc gtg att atg cag aac		1442
	Glu Arg Phe Asn Glu Ser Gly Asp	Pro Ser Cys Val Ile Met Gln Asn		
	465	470	475	
	tgg gct agg att gag gct cga ctg	tgc aat aac atg cag aaa gct cgg		1490

	Trp	Ala	Arg	Ile	Glu	Ala	Arg	Leu	Cys	Asn	Asn	Met	Gln	Lys	Ala	Arg	
	480				485				490								
	gaa ctc tgg gat agc atc atg acc aga gga aat gcc aag tac gcc aac																1538
	Glu	Leu	Trp	Asp	Ser	Ile	Met	Thr	Arg	Gly	Asn	Ala	Lys	Tyr	Ala	Asn	
5	495				500				505								
	atg tgg cta gag tat tac aac ctg gaa aga gct cat ggt gac acc cag																1586
	Met	Trp	Leu	Glu	Tyr	Tyr	Asn	Leu	Glu	Arg	Ala	His	Gly	Asp	Thr	Gln	
	510				515				520				525				
	cac tgc cgg aag gct ctg cac cgg gcc gtc cag tgc acc agt gac tac																1634
10	His Cys Arg Lys Ala Leu His Arg Ala Val Gln Cys Thr Ser Asp Tyr																
					530				535				540				
	cca gag cac gtc tgc gaa gtg tta ctc acc atg gag agg aca gaa ggt																1682
	Pro	Glu	His	Val	Cys	Glu	Val	Leu	Leu	Thr	Met	Glu	Arg	Thr	Glu	Gly	
	545				550				555								
15	tct tta gaa gat tgg gat ata gct gtt cag aaa act gaa acc cga tta																1730
	Ser	Leu	Glu	Asp	Trp	Asp	Ile	Ala	Val	Gln	Lys	Thr	Glu	Thr	Arg	Leu	
	560				565				570								
	gct cgt gtc aat gag cag aga atg aag gct gca gag aag gaa gca gcc																1778
	Ala	Arg	Val	Asn	Glu	Gln	Arg	Met	Lys	Ala	Ala	Glu	Lys	Glu	Ala	Ala	
20	575				580				585								
	ctt gtg cag caa gaa gaa gaa aag gct gaa caa cgg aaa aga gct cgg																1826
	Leu	Val	Gln	Gln	Glu	Glu	Glu	Lys	Ala	Glu	Gln	Arg	Lys	Arg	Ala	Arg	
	590				595				600				605				
	gct gag aag aaa gcg tta aaa aag aag aaa aag atc aga ggc cca gag																1874
25	Ala Glu Lys Lys Ala Leu Lys Lys Lys Lys Lys Ile Arg Gly Pro Glu																
	610				615				620								
	aag cgc gga gca gat gag gac gat gag aaa gag tgg ggc gat gat gaa																1922
	Lys	Arg	Gly	Ala	Asp	Glu	Asp	Asp	Glu	Lys	Glu	Trp	Gly	Asp	Asp	Glu	
	625				630				635								

gaa gag cag cct tcc aaa cgc aga agg gtc gag aac agc atc cct gca 1970
 Glu Glu Gln Pro Ser Lys Arg Arg Arg Val Glu Asn Ser Ile Pro Ala
 640 645 650
 gct gga gaa aca caa aat gta gaa gta gca gca ggg ccc gct ggg aaa 2018
 5 Ala Gly Glu Thr Gln Asn Val Glu Val Ala Ala Gly Pro Ala Gly Lys
 655 660 665
 tgt gct gcc gta gat gtg gag ccc cct tcg aag cag aag gag aag gca 2066
 Cys Ala Ala Val Asp Val Glu Pro Pro Ser Lys Gln Lys Glu Lys Ala
 670 675 680 685
 10 gcc tcc ctg aag agg gac atg ccc aag gtg ctg cac gac agc agc aag 2114
 Ala Ser Leu Lys Arg Asp Met Pro Lys Val Leu His Asp Ser Ser Lys
 690 695 700
 gac agc atc acc gtc ttt gtc agc aac ctg ccc tac agc atg cag gag 2162
 Asp Ser Ile Thr Val Phe Val Ser Asn Leu Pro Tyr Ser Met Gln Glu
 15 705 710 715
 ccg gac acg aag ctc agg cca ctc ttc gag gcc tgt ggg gag gtg gtc 2210
 Pro Asp Thr Lys Leu Arg Pro Leu Phe Glu Ala Cys Gly Glu Val Val
 720 725 730
 cag atc cga ccc atc ttc agc aac cgt ggg gat ttc cga ggt tac tgc 2258
 20 Gln Ile Arg Pro Ile Phe Ser Asn Arg Gly Asp Phe Arg Gly Tyr Cys
 735 740 745
 tac gtg gag ttt aaa gaa gag aaa tca gcc ctt cag gca ctg gag atg 2306
 Tyr Val Glu Phe Lys Glu Glu Lys Ser Ala Leu Gln Ala Leu Glu Met
 750 755 760 765
 25 gac cgg aaa agt gta gaa ggg agg cca atg ttt gtt tcc ccc tgt gtg 2354
 Asp Arg Lys Ser Val Glu Gly Arg Pro Met Phe Val Ser Pro Cys Val
 770 775 780
 gat aag agc aaa aac ccc gat ttt aag gtg ttc agg tac agc act tcc 2402
 Asp Lys Ser Lys Asn Pro Asp Phe Lys Val Phe Arg Tyr Ser Thr Ser

	785	790	795	
	cta gag aaa cac aag	ctg ttc atc tca ggc	ctg cct ttc tcc tgt act	2450
	Leu Glu Lys His Lys	Leu Phe Ile Ser Gly	Leu Pro Phe Ser Cys Thr	
	800	805	810	
5	aaa gag gaa cta gaa	gaa atc tgt aag gct cat	ggc acc gtg aag gac	2498
	Lys Glu Glu Leu Glu	Glu Ile Cys Lys Ala His	Gly Thr Val Lys Asp	
	815	820	825	
	ctc agg ctg gtc acc aac	cgg gct ggc aaa cca	aag ggc ctg gcc tac	2546
	Leu Arg Leu Val Thr	Asn Arg Ala Gly Lys	Pro Lys Gly Leu Ala Tyr	
10	830	835	840	845
	gtg gag tat gaa aat	gaa tcc cag gcg tgc	cag gct gtg atg aag atg	2594
	Val Glu Tyr Glu Asn	Glu Ser Gln Ala Ser	Gln Ala Val Met Lys Met	
	850	855	860	
	gac ggc atg act atc	aaa gag aac atc atc	aaa gtg gca atc agc aac	2642
15	Asp Gly Met Thr Ile	Lys Glu Asn Ile Ile	Lys Val Ala Ile Ser Asn	
	865	870	875	
	cct cct cag agg aaa	gtt cca gag aag cca	gag acc agg aag gca cca	2690
	Pro Pro Gln Arg Lys	Val Pro Glu Lys Pro	Glu Thr Arg Lys Ala Pro	
	880	885	890	
20	ggt ggc ccc atg ctt	ttg ccg cag aca tac	gga gcg agg ggg aag gga	2738
	Gly Gly Pro Met Leu	Leu Pro Gln Thr Tyr	Gly Ala Arg Gly Lys Gly	
	895	900	905	
	agg acg cag ctg tct	cta ctg cct cgt gcc	ctg cag cgc cca agt gct	2786
	Arg Thr Gln Leu Ser	Leu Leu Pro Arg Ala	Leu Gln Arg Pro Ser Ala	
25	910	915	920	925
	gca gct cct cag gct	gag aac ggc cct gcc	gcg gct cct gca gtt gcc	2834
	Ala Ala Pro Gln Ala	Glu Asn Gly Pro Ala	Ala Ala Pro Ala Val Ala	
	930	935	940	
	gcc cca gca gcc acc	gag gca ccc aag atg	tcc aat gcc gat ttt gcc	2882

12/32

Ala Pro Ala Ala Thr Glu Ala Pro Lys Met Ser Asn Ala Asp Phe Ala

945

950

955

aag ctg ttt ctg aga aag tgaacgggac gctgggagac aggaaatgcc 2930

Lys Leu Phe Leu Arg Lys

5

960

ttacttcaact ctggcccggc ggacctccca ccaccagca gtgcactggg gatggacagg 2990

cctgggtgtgc tgcgtgctcg caaccacaga tggctcctcg gcttttagaca gaaaggggaa 3050

ggggttctaa gtcaagagcc tttcagtgt cctcatatt gagggcagtg gcagaaaagt 3110

gaccactctg caggctgggc ccaggatgtg gtgtcctgag atagttttgt atcttaaaga 3170

10

ctgaggcaca gaagcgaaac gagaacacac tgtttttgag acacagttgt ccaaagtgtt 3230

ctggccagct ccggcccctt tttgtatgac acttctcttc caccctgcac agcacatgtg 3290

cccgtcattc ttttaatttt aaaagatgaa atggcagatg ctagtaattc acagaatggc 3350

ctcttggtggg ggtgggtctg aggggaagtca gctataaaac atttgctgga gttttgttca 3410

atggggctgt gcatttttat attatgtgtt tgtaaatgac atgtcagccc ttgtttcatg 3470

15

tttctaaaa gcagaatatt tgaacattt gttttgtata ggaattattt gtgccacctg 3530

ctgtggactg ttttctttgc ctagtacta gtgacctgtg ttgtctaaac atgagtttca 3590

gccctttggt tttgtttaat accatgtcaa atgcaaactt caattctccc catttagctt 3650

tattaaactg acgttctctt caaaacttct tgctgaatgg tactcagatg tgcattcaca 3710

tacagatgtg ttttgaagtg ggtgtacctt gctttacctt atagatgtgt aatagaact 3770

20

tttgaagtc aaaaaaaaaa aaaaaaaaaa 3798

<210> 3

<211> 10

<212> PRT

25

<213> Homo sapiens

<400> 3

Val Tyr Asp Tyr Asn Cys His Val Asp Leu

5

10

<210> 4

<211> 10

<212> PRT

<213> Homo sapiens

5 <400> 4

Leu Phe Glu Lys Ala Val Lys Asp Tyr Ile

5

10

<210> 5

10 <211> 9

<212> PRT

<213> Homo sapiens

<400> 5

Asn Tyr Asn Lys Ala Leu Gln Gln Leu

15

5

<210> 6

<211> 9

<212> PRT

20 <213> Homo sapiens

<400> 6

Ala Tyr Ile Asp Phe Glu Met Lys Ile

5

25 <210> 7

<211> 10

<212> PRT

<213> Homo sapiens

<400> 7

Asp Tyr Val Glu Ile Trp Gln Ala Tyr Leu

5

10

<210> 8

5

<211> 9

<212> PRT

<213> Homo sapiens

<400> 8

Asp Tyr Leu Arg Arg Arg Val Asp Phe

10

5

<210> 9

<211> 9

<212> PRT

15

<213> Homo sapiens

<400> 9

Ala Phe Thr Arg Ala Leu Glu Tyr Leu

5

20

<210> 10

<211> 9

<212> PRT

<213> Homo sapiens

<400> 10

25

Asp Tyr Asn Cys His Val Asp Leu Ile

5

<210> 11

<211> 10

<212> PRT

<213> Homo sapiens

<400> 11

Ile Phe Pro Leu Thr Glu Glu Leu Trp Leu

5

5

10

<210> 12

<211> 9

<212> PRT

10

<213> Homo sapiens

<400> 12

Asp Tyr Ile Cys Pro Asn Ile Trp Leu

5

15

<210> 13

<211> 10

<212> PRT

<213> Homo sapiens

<400> 13

20

Glu Tyr Gly Gln Tyr Ser Val Gly Gly Ile

5

10

<210> 14

<211> 9

25

<212> PRT

<213> Homo sapiens

<400> 14

Ala Tyr Arg Glu Phe Glu Ser Ala Ile

5

<210> 15

<211> 10

<212> PRT

5 <213> Homo sapiens

<400> 15

Leu Phe Arg Arg Gln Leu Ala Ile Pro Leu

5

10

10 <210> 16

<211> 10

<212> PRT

<213> Homo sapiens

<400> 16

15 Glu Tyr Glu Glu Trp Ser Glu Asp Pro Ile

5

10

<210> 17

<211> 9

20 <212> PRT

<213> Homo sapiens

<400> 17

Lys Tyr Lys Pro Tyr Glu Glu Ala Leu

5

25

<210> 18

<211> 10

<212> PRT

<213> Homo sapiens

<400> 18

Arg Tyr Ser Gln Tyr Leu Asp Arg Gln Leu

5

10

5

<210> 19

<211> 10

<212> PRT

<213> Homo sapiens

<400> 19

10

Thr Phe Glu Lys Ala Leu Asn Ala Gly Phe

5

10

<210> 20

<211> 10

15

<212> PRT

<213> Homo sapiens

<400> 20

Asp Phe Lys Gln Asp Ser Ser Lys Glu Leu

5

10

20

<210> 21

<211> 10

<212> PRT

<213> Homo sapiens

25

<400> 21

Asp Tyr Pro Glu His Val Cys Glu Val Leu

5

10

<210> 22

<211> 10

<212> PRT

<213> Homo sapiens

<400> 22

5 Asp Phe Arg Gly Tyr Cys Tyr Val Glu Phe

5

10

<210> 23

<211> 9

10 <212> PRT

<213> Homo sapiens

<400> 23

Glu Phe Lys Glu Glu Lys Ser Ala Leu

5

15

<210> 24

<211> 9

<212> PRT

<213> Homo sapiens

20 <400> 24

Pro Phe Ser Cys Thr Lys Glu Glu Leu

5

<210> 25

25 <211> 9

<212> PRT

<213> Homo sapiens

<400> 25

Trp Leu His Asp Glu Ile Ser Met Ala

5

<210> 26

<211> 9

5 <212> PRT

<213> Homo sapiens

<400> 26

Ser Leu Phe Arg Arg Gln Leu Ala Ile

5

10

<210> 27

<211> 9

<212> PRT

<213> Homo sapiens

15 <400> 27

Leu Leu Gln Ala Glu Ala Pro Arg Leu

5

<210> 28

20 <211> 9

<212> PRT

<213> Homo sapiens

<400> 28

Arg Leu Ala Glu Tyr Gln Ala Tyr Ile

25

5

<210> 29

<211> 9

<212> PRT

<213> Homo sapiens

<400> 29

Leu Leu Ala Met Glu Arg His Gly Val

5

5

<210> 30

<211> 9

<212> PRT

<213> Homo sapiens

10

<400> 30

Asn Val Tyr Asp Tyr Asn Cys His Val

5

<210> 31

15

<211> 9

<212> PRT

<213> Homo sapiens

<400> 31

Lys Met Ser Glu Ile Phe Pro Leu Thr

20

5

<210> 32

<211> 9

<212> PRT

25

<213> Homo sapiens

<400> 32

Trp Leu Glu Tyr Gly Gln Tyr Ser Val

5

<210> 33

<211> 10

<212> PRT

<213> Homo sapiens

5 <400> 33

Ser Val Phe Glu Arg Ala Leu Ser Ser Val

5

10

<210> 34

10 <211> 10

<212> PRT

<213> Homo sapiens

<400> 34

Ala Leu Leu Gln Ala Glu Ala Pro Arg Leu

15

5

10

<210> 35

<211> 10

<212> PRT

20 <213> Homo sapiens

<400> 35

Lys Ile Gly Asp Pro Ala Arg Ile Gln Leu

5

10

25 <210> 36

<211> 10

<212> PRT

<213> Homo sapiens

<400> 36

Ile Gln Leu Ile Phe Glu Arg Ala Leu Val

5

10

<210> 37

5

<211> 9

<212> PRT

<213> Homo sapiens

<400> 37

Gln Leu Ile Phe Glu Arg Ala Leu Val

10

5

<210> 38

<211> 10

<212> PRT

<213> Homo sapiens

15

<400> 38

Asp Leu Trp Ile Arg Tyr Ser Gln Tyr Leu

5

10

<210> 39

<211> 9

20

<212> PRT

<213> Homo sapiens

<400> 39

Ala Leu Trp Ser Arg Tyr Leu Leu Ala

5

25

<210> 40

<211> 10

<212> PRT

<213> Homo sapiens

<400> 40

Ala Leu Trp Ser Arg Tyr Leu Leu Ala Met

5

10

5

<210> 41

<211> 10

<212> PRT

<213> Homo sapiens

<400> 41

10

Tyr Leu Leu Ala Met Glu Arg His Gly Val

5

10

<210> 42

<211> 10

15

<212> PRT

<213> Homo sapiens

<400> 42

Ala Leu Asn Ala Gly Phe Ile Gln Ala Thr

5

10

20

<210> 43

<211> 9

<212> PRT

<213> Homo sapiens

25

<400> 43

Tyr Leu Asp Tyr Leu Arg Arg Arg Val

5

<210> 44

<211> 10

<212> PRT

<213> Homo sapiens

<400> 44

5 Ile Met Thr Arg Gly Asn Ala Lys Tyr Ala

5

10

<210> 45

<211> 9

10 <212> PRT

<213> Homo sapiens

<400> 45

Asn Met Trp Leu Glu Tyr Tyr Asn Leu

5

15

<210> 46

<211> 10

<212> PRT

<213> Homo sapiens

20 <400> 46

Val Leu His Asp Ser Ser Lys Asp Ser Ile

5

10

<210> 47

25 <211> 9

<212> PRT

<213> Homo sapiens

<400> 47

Ser Ile Thr Val Phe Val Ser Asn Leu

5

<210> 48

<211> 9

5 <212> PRT

<213> Homo sapiens

<400> 48

Ser Met Gln Glu Pro Asp Thr Lys Leu

5

10

<210> 49

<211> 10

<212> PRT

<213> Homo sapiens

15 <400> 49

Lys Ser Val Glu Gly Arg Pro Met Phe Val

5

10

<210> 50

20 <211> 9

<212> PRT

<213> Homo sapiens

<400> 50

Lys Val Phe Arg Tyr Ser Thr Ser Leu

25

5

<210> 51

<211> 9

<212> PRT

<213> Homo sapiens

<400> 51

Met Leu Leu Pro Gln Thr Tyr Gly Ala

5

5

<210> 52

<211> 10

<212> PRT

<213> Homo sapiens

10

<400> 52

Lys Met Ser Asn Ala Asp Phe Ala Lys Leu

5

10

<210> 53

15

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<221> VARIANT

20

<222> 2

<223> Xaa is Phe, Tyr, Met or Trp

<220>

<221> VARIANT

<222> 10

25

<223> Xaa is Phe, Leu, Ile, Trp or Met.

<400> 53

Val Xaa Asp Tyr Asn Cys His Val Asp Xaa

5

10

<210> 54

 $\langle 211 \rangle$ 10

<212> PRT

<213> Artificial Sequence

5 $\langle 220 \rangle$

<221> VARIANT

222 2

<223> Xaa is Phe, Tyr, Met or Trp.

<220>

10 <221> VARIANT

<222> 10

<223> Xaa is Phe, Leu, \Ile, Trp or Met.

<400> 54

Leu Xaa Glu Lys Ala Val ~~Lys~~ Asp Tyr Xaa

15 5 10

<210> 55

<211> 9

<212> PRT

20 <213> Artificial Sequence

<220>

〈221〉 VARIANT

<222> 2

<223> Xaa is Phe, Tyr, Met or Trp.

25 <220>

<221> VARIANT

<222> 9

<223> Xaa is Phe, Leu, Ile, Trp or Met.

<400> 55

Asn Xaa Asn Lys Ala Leu Gln Gln Xaa

5

<210> 56

5 <211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> VARIANT

10 <222> 2

<223> Xaa is Phe, Tyr, Met or Trp.

<220>

<221> VARIANT

<222> 9

15 <223> Xaa is Phe, Leu, Ile, Trp or Met.

<400> 56

Ala Xaa Ile Asp Phe Glu Met Lys Xaa

5

20 <210> 57

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

25 <221> VARIANT

<222> 2

<223> Xaa is Phe, Tyr, Met or Trp.

<220>

<221> VARIANT

<222> 10

<223> Xaa is Phe, Leu, Ile, Trp or Met.

<400> 57

Asp Xaa Val Glu Ile Trp Gln Ala Tyr Xaa

5

5

10

<210> 58

<211> 9

<212> PRT

10

<213> Artificial Sequence

<220>

<221> VARIANT

<222> 2

<223> Xaa is Phe, Tyr, Met or Trp.

15

<220>

<221> VARIANT

<222> 9

<223> Xaa is Phe, Leu, Ile, Trp or Met.

<400> 58

20

Asp Xaa Leu Arg Arg Arg Val Asp Xaa

5

<210> 59

<211> 9

25

<212> PRT

<213> Artificial Sequence

<220>

<221> VARIANT

<222> 2

<223> Xaa is Phe, Tyr, Met or Trp.

<220>

<221> VARIANT

<222> 9

5 <223> Xaa is Phe, Leu, Ile, Trp or Met.

<400> 59

Ala Xaa Thr Arg Ala Leu Glu Tyr Xaa

5

10 <210> 60

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

15 <221> VARIANT

<222> 2

<223> Xaa is Leu, Met, Val, Ile or Gln.

<220>

<221> VARIANT

20 <222> 9

<223> Xaa is Val or Leu.

<400> 60

Trp Xaa His Asp Glu Ile Ser Met Xaa

5

25

<210> 61

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<221> VARIANT

<222> 2

<223> Xaa is Leu, Met, Val, Ile or Gln.

5 <220>

<221> VARIANT

<222> 9

<223> Xaa is Val or Leu.

<400> 61

10 Ser Xaa Phe Arg Arg Gln Leu Ala Xaa

5

<210> 62

<211> 9

15 <212> PRT

<213> Artificial Sequence

<220>

<221> VARIANT

<222> 2

20 <223> Xaa is Leu, Met, Val, Ile or Gln.

<220>

<221> VARIANT

<222> 9

<223> Xaa is Val or Leu.

25 <400> 62

Leu Xaa Gln Ala Glu Ala Pro Arg Xaa

5

<210> 63

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

5 <221> VARIANT

<222> 2

<223> Xaa is Leu, Met, Val, Ile or Gln.

<220>

<221> VARIANT

10 <222> 9

<223> Xaa is Val or Leu.

<400> 63

Arg Xaa Ala Glu Tyr Gln Ala Tyr Xaa

5

15

<210> 64

<211> 9

<212> PRT

<213> Artificial Sequence

20 <220>

<221> VARIANT

<222> 2

<223> Xaa is Leu, Met, Val, Ile or Gln.

<220>

25 <221> VARIANT

<222> 9

<223> Xaa is Val or Leu.

<400> 64

Leu Xaa Ala Met Glu Arg His Gly Xaa

30

5